

Citizen Science Humming Along

Weighing less than a nickel, hummingbirds may be among the most common backyard visitors along the Pacific Coast from Canada to Mexico, but surprisingly little is known about their population dynamics, disease ecology or genetics. That's where expertise from wildlife veterinarians and involvement of citizen scientists come in.

Since 2010, Holly Ernest—wildlife veterinarian, geneticist, and a professor in the School of Veterinary Medicine's Department of Population Health and Reproduction and Veterinary Genetics Laboratory—has run the Hummingbird Health and Genetic Diversity Project. The primary goals of this research are to determine levels of health and disease, evaluate migration ecology, and assess genetic diversity of species that breed or migrate through California: Anna's, Costa's, Allen's, Rufous, Black-chinned, Calliope, and Broad-tailed hummingbirds.

Ernest is a federally permitted Master bird bander, one of fewer than about 150 in the country specializing in hummingbirds. For field research, she coordinates a group of dedicated volunteers including retirees, undergraduate and graduate students, and faculty members to gather data.

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Investing in Tomorrow's Veterinarians

Approximately 200 students, donors, faculty and staff gathered at the scholarship donor appreciation dinner on May 2. Dean Michael Lairmore welcomed the group and thanked individuals, corporations and associations for their gifts that help defray rising educational costs for future veterinarians and support special projects.

This year, the school awarded 710 scholarships amounting to \$2 million—\$200,000 over last year. The scholarship program is enhanced by the school's need-based grant program. The scholarship and grant programs combined provide a total of \$4 million in financial support. More than 90 percent of the school's students receive scholarship or grant funding.

"Our school is deeply grateful for the generous support of scholarship donors who make these new and continuing awards possible," said Lairmore in his opening remarks. "This investment in tomorrow's veterinary



Dan and Yvonne Webb (far left and right) established the Dan and Yvonne Webb Scholarships to recognize outstanding students interested in small animal medicine. This year's recipients are Brendan Boostrom, Agnieszka Wolfson (center) and Maribel Munoz.

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Commencement 2013



Commencement

Ashley Williams joined 133 other new DVM graduates at the school's 62nd commencement ceremony on June 14. Nine candidates for the Master of Preventive Veterinary Medicine program and 40 residents were also honored.



Alumni Achievement Awards

Each year, the school bestows Alumni Achievement Awards to alumni who have made outstanding personal and professional contributions to veterinary science, veterinary practice or the advancement of human welfare. Recipients of the 2013 award are from top left: Stephen DiBartola, Don and Flavia Millikan (accepting for their late son, Robert Millikan). From bottom left: Jack Walther, Sue Stover and Roy Pool.

Tomorrow's Veterinarians Continued from page 1

workforce will benefit animals, people, and the environment for decades to come."

Sean Owens, associate dean for Student Programs, followed the dean's introduction with the inspiring story of second year student Spencer Kehoe. He persevered with his studies despite nearly losing sight in one eye, caused by an infection contracted while conducting research in Africa.

Dustin Noack, class of 2014, gave a moving account of what donor generosity has meant to him. He received the Westminster Kennel Club scholarship and a UC Regents scholarship in his first year—gifts that enabled him to pursue his childhood dream of becoming a veterinarian. He was one of four students this year to receive the Mary Silan Seawright Scholarship for third and fourth-year students interested in small animal medicine.

A mother's love and encouragement led to Alison Pillsbury's (DVM 1988) career. She honored her mother by establishing the Frances Park Pillsbury Memorial Scholarships in 2000. Pillsbury shared fond memories of her mother and accounts of her childhood love for all creatures.

Dan and Yvonne Webb established a scholarship because they wanted to give back to those who enriched their lives. Veterinarians at the school helped two of their pets with critical medical conditions. The Webbs expressed, "We have great respect for the veterinarians and their devotion to our pets. Meeting our bright scholarship recipients was the most rewarding experience and made it more meaningful. We are very pleased that we are able to help them."

In his closing remarks, Lairmore addressed students. "When I see the promise that you bring to our school, with your energy, intellect and talents, I am confident for the future of veterinary medicine. I hope you can look around and see that you are supported by people who care about your success and value your contribution to the profession."

For more inspiring stories captured in a video, visit www.vetmed.ucdavis.edu/whatsnew/article.cfm?id=2706

If you are interested in making a gift for scholarships, please contact the Development Office at (530) 752-7024.

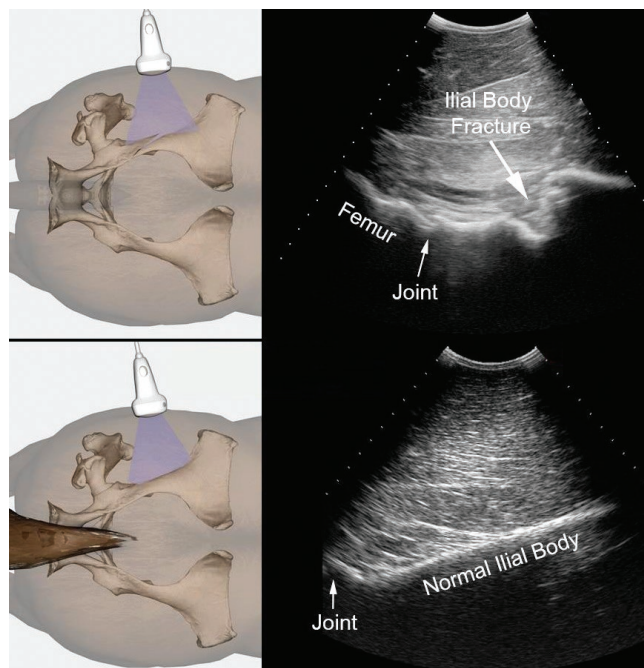
UC Davis Faculty Excel in Equine Pelvic Ultrasound

The diverse caseload of the UC Davis William R. Pritchard Veterinary Medical Teaching Hospital (VMTH), and the ensuing experience gained from that caseload, holds many benefits for all involved. Never has this been more true than for the Large Animal Clinic's Ultrasound Service, specifically with pelvic ultrasound examinations on horses.

Having conducted more than 325 pelvic ultrasound examinations since 1999, the VMTH's experience in this area may not be rivaled by any other veterinary hospital. Ultrasound practitioners from around the world are taking note as VMTH faculty share some of that experience. Interest in UC Davis' ultrasound experience has been so strong that a Facebook page (www.facebook.com/UCDLargeAnimalUltrasound), dedicated specifically to ultrasound, has been created.

"Our page has been very popular with followers from over 20 countries," states veterinarian Mary Beth Whitcomb, section head of the Large Animal Ultrasound Service at the VMTH. "It continues to grow at a steady rate."

As a leader in equine pelvic ultrasound, Whitcomb collaborated with John Doval of the school's MediaLab to develop several 3D instructional models (some shared on that Facebook page) on how to conduct pelvic ultrasound examinations. These models are used extensively to teach students and veterinarians about the role of ultrasound to diagnose pelvic fractures. Whitcomb routinely presents her ultrasound experience at continuing education seminars nationwide, such as the annual American Association of Equine Practitioners conference.



The ultrasound image in the upper photo clearly shows a fracture in the ilial body, whereas the lower photo shows a solid white line, indicating an intact ilium.

Using the most advanced ultrasound machines—selected for their excellence in musculoskeletal imaging—Whitcomb and fellow veterinarian Betsy Vaughan can diagnose fractures in the equine pelvis more efficiently and safely than with radiography.

Ultrasound (also commonly used to diagnose soft tissue and joint damage) is minimally invasive. The ultrasound probe is positioned on the horse's skin and moved along the bony surfaces of the pelvis. A displaced fracture can easily be determined by an alteration in the solid bright line that represents the bone's surface on the ultrasound screen. Clinicians also perform rectal examinations to see those parts of the pelvis that cannot be seen through the skin.

Fractures are often the result of a fall and usually cause the horse to be severely lame (visible at the walk). While fractures can be found throughout the pelvis, the most common fracture diagnosed at the VMTH is a chip fragment of the acetabular rim (hip joint socket).

"For me, the best benefit of pelvic ultrasound is that it often provides a definitive answer," states Whitcomb. "If you've found a pelvic fracture, you've found the answer. Being able to give a positive diagnosis to a stressed client is very satisfying from our standpoint and from the client's standpoint."



Kick-off Pint

Pint, a Nova Scotia duck tolling retriever, returns to the football field this fall as the newest member of the Aggies' special teams. Owned by Danika Bannasch, associate professor of veterinary medicine, Pint retrieves the kickoff tee at home games, earning cookies and a good game of tug-of-war.

UC Davis Explores Telemedicine and Distance Education

As technology “virtually” erases hundreds of miles between people, the school is exploring options for delivering its breadth of knowledge and information to clients and clinicians throughout the state and beyond. Two areas of concentration being explored are telemedicine and distance education. Both focus on ways of reaching people outside of Davis without having to travel.

A Diagnosis From 500 Miles Away

Through the UC Veterinary Medical Center – San Diego (UCVMC-SD), faculty in Davis are able to work with nutrition clients in the San Diego area. Dubbed TeleVet™ Nutrition, the program is the school's first venture into telemedicine. Other services being explored by UCVMC-SD with telemedicine potential include nephrology/hemodialysis consultations, prescription drug information and renal pathology, all of which are specialties of the San Diego facility. Meanwhile, the VMTH is exploring telemedical applications in radiology, clinical pathology and anatomic pathology.



Nutrition clients in Southern California can have virtual appointments with veterinarians at the VMTH through TeleVet™ Nutrition.

These TeleVet™ programs could potentially lead to exporting clinical expertise to national and international locations where there is limited or no specialty expertise. While there are many legal and logistical hurdles to cross, leadership remains optimistic that telemedicine can be a significant part of the hospital's future, and advance the delivery of veterinary services to the profession. Veterinarians Larry Cowgill (Director of UCVMC-SD) and

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New Disease in Anna's Hummingbirds

Thanks to data from banding studies, as well as contributions from wildlife rehabilitation hospitals, Loreto Godoy, a PhD candidate in Professor Holly Ernest's lab, has recently discovered a previously unidentified avian pox in Anna's hummingbirds. It isn't clear yet whether this is a new or pre-existing disease and researchers are just now collecting data through banding studies. She's working to characterize the risk factors for this particular disease and to determine the impact of avian pox in this species. The research paper by Godoy, Ernest, avian health expert Lisa Tell, wildlife pathologist Leslie Woods, and collaborators is in press with the *Journal of Wildlife Diseases*.

"In other birds, this disease may not always be fatal, but we don't have a lot of recapture data to assess rates of illness and death for hummingbirds," Godoy said. "In other species, the pox results in behavior changes that lead to breeding problems, distress calls, and predation because they can't feed or fly as well."

We're saddened to note that as this issue was going to press, Loreto Godoy was involved in a fatal car accident. She is fondly remembered by all who knew her.

Humming Along Continued from page 1

Volunteers gather long before sunrise to set net traps over nectar feeders in a variety of gardens. When a hummingbird comes to feed, the net drops and a trained volunteer is able to carefully remove the tiny bird from the trap and bird banders record measurements like weight, bill and wing length, body fat, disease and molt stage. Because the birds need to eat every 20 to 30 minutes, the veterinarian-bander feeds the birds after recording all the data. Each bird is fitted with an identification band so that if it is recaptured, the new measurements can be compared against previous data. Banders need a federal permit, training—and patience!

Tracking the little fliers is a challenge because they can't be fitted with a GPS collar like mountain lions and radio transmitters are not quite small enough for practical use in hummingbirds. Ernest, whose lab covers a wide variety of wildlife research projects, says banding provides one of the key tools for gathering the scientific data that will provide novel health and ecology information about hummingbirds.

"Banding is a great way to teach people about wildlife health and research, and brings science close to home," Ernest said. "We are excited about involving the public in wildlife research and also about what we hope to learn as a result of this collaboration."

This project relies on partnerships between Ernest's Hummingbird Project, UC Nature Reserves, the UC Davis Wildlife Museum, wildlife rehabilitation hospitals, members of the public who allow access to land and gardens, the Hummingbird Monitoring Network, state and federal agencies, Audubon Societies and others.

WELCOME

Sean Owens Joins Student Programs

Sean Owens, assistant professor of clinical pathology, took the helm as associate dean of Student Programs in April. As a member of the school's senior leadership team, Owens provides and coordinates support services for students, and manages the DVM admissions process and student ceremonies. He also promotes the school's strategic efforts to broaden the diversity of the student community to represent societal demographics and expands our outreach efforts at the high school and undergraduate levels.



Sean Owens

Claudia Sonder Takes Reins at CEH

After serving as interim director of the Center for Equine Health for six months, Claudia Sonder is now director. She is a 1995 graduate of the school and has been a passionate rider since the age of seven. As a liaison between the school and the equine industry in California and nationally, Sonder monitors the industry's needs and participates with government and non-government organizations and individuals in providing scientific and educational resources. Sonder will continue to promote the expertise of the school's faculty and current research activities in equine health care, and promote the national and international excellence of the school's equine programs.



Claudia Sonder

Strategic Planning: Leadership

Mentoring faculty, staff and students in leadership skills and techniques is a strategic investment in the school's future. Leadership training activities during this past year have taken several forms:

Individual Leadership Education Conferences – Eleven faculty and seven students participated in national educational and leadership conferences where they had the opportunity to expand their professional skills beyond traditional veterinary medicine disciplines. At the national level, they worked on concepts of leading change, emotional intelligence, teamwork, enhanced communication and media training. Participants also networked with colleagues from other veterinary institutions.

Strategy Champions – Dean Lairmore invited 48 faculty and staff to be strategic planning champions to lead, define and implement activities that support the seven strategic plan goals. The champions gathered in sessions to discuss team and network building, project concept development

The Seven Strategic Goals

- Educate world leaders in academic veterinary medicine
- Perform high-impact transdisciplinary research
- Develop cutting-edge clinical programs
- Promote animal and human well-being
- Maintain school infrastructure and sustainable resources
- Retain excellent faculty and staff
- Promote academic, government, industry collaboration

and communication skills to better prepare them to lead their teams. On-going leadership educational topics will be offered throughout the 5-year strategic planning initiative.

Existing Leaders – More than 25 faculty/professional staff already serving in leadership positions participated in an engaging series of leadership, communications, conflict resolution and influence building discussions. Presentations and group activities focused on six basic styles of leadership outlined in the Harvard Business Review article "*Leadership that Gets Results*."

Faculty and Staff Leaders – Twenty-three faculty and 48 staff leaders were invited to participate in a 3-part series of leadership sessions. The first session explored the powerful effect that "mental models" have on the decision making process. Participants learned the science behind how past experiences, points of reference and interpretation influence behavior. Awareness of these concepts enhances leadership effectiveness and helps to reduce obstacles to desired outcomes. Future topics include leadership styles and conflict management styles.

What's in Your Compost?

So what do a group of horses, a flock of wild turkeys and a home garden have in common? *Salmonella*—a bacterium that can travel from one species to another and persist in the environment to cause serious food borne illness.

In a case that exemplifies the school's approach to one health, Michele Jay-Russell—a veterinarian and food safety researcher at the Western Center for Food Safety—recently co-authored a study in *Zoonoses and Public Health*. The journal article outlines how the diagnosis of *Salmonella* in a horse brought to the UC Davis William R. Pritchard Veterinary Medical Teaching Hospital led to the unraveling of a mystery on the northern California farm where the horse lived.

Jay-Russell heard about the case from her colleague John Madigan, professor of medicine and epidemiology at the school. The farm's owners invited Jay-Russell and Madigan to visit and see if they could uncover the source of the *Salmonella* infection. They sampled water from horse troughs, manure storage piles, wild turkey feces and soil from the family's edible home garden where raw horse manure had been used as compost.

"During the seven months of sampling, the garden soil kept coming back positive, which showed that this strain of *Salmonella* could persist for months," Jay-Russell said.

While the researchers couldn't be completely certain about the original source of *Salmonella* on the farm, they suspected that a recent surge in the wild turkey population on the property introduced the bacteria to the horses through feces in the horse corrals and water troughs.

"What is clearer is that the raw horse manure applied as fertilizer was the most likely source of garden soil contamination," Jay-Russell explained. "We suspect that the damp climate in Mendocino County may have contributed to the longevity of this bacterium in the soil long after the owners stopped applying the horse manure to the garden."

Fortunately, the owners didn't get sick, but this investigation showed the potential for widespread dissemination of *Salmonella* in a farm environment following equine infection and the need to be aware of hazards associated with using raw manure in a home garden.

"It's good to let people know about the risks and to correct misinformation about ways to treat the compost pile before using it in the garden," Jay-Russell said. "The biggest take home message from this experience is to be very careful about using manure from sick horses—and to be cautious about offers of free manure—you don't know what's in there."

Telemedicine and Distance Education Continued from page 4

Matt Mellema (Chair of the Telemedicine Committee), along with Frank LaBonte (VMTH Administrator), are meeting with the California Veterinary Medical Board to continue efforts to clarify regulatory issues involved with telemedicine.

Knowledge From Afar

Distance education is another initiative which would capitalize on the educational expertise at UC Davis to deliver this knowledge through virtual seminars, student lectures, clinical rounds, topic discussions and "brown bag" interactions without the time and expense of travel.

Veterinarians desire more intensive, meaningful, convenient and less costly educational opportunities than what is currently available. While the school currently offers continuing education (CE) seminars via webinar, there is a wealth of expertise and educational content beyond typical CE which could be exported to a professional audience. Faculty in both San Diego and Davis are utilizing distance education to deliver expertise to larger and nontraditional audiences.

"Internationally recognized expertise can now be accessed instantaneously throughout the world to facilitate consultations, expert opinion and training," states Cowgill. "The development and application of distance learning technologies will help faculty to serve the profession within and outside of California."

Donors Honored for Their Dedication to Animal Health

Donors make a significant impact on advancing the health of animals in many ways. In appreciation for their extraordinary dedication, the school honored distinguished friends at the annual Heritage Society for Animals reception on April 24.

Dean Michael Lairmore welcomed 31 new members to the Heritage Society for Animals, whose membership has grown to 621. The society recognizes donors who have chosen to express their commitment to animals through planned gifts to the school.

Members share in their affection for animals and in their belief that animals have enriched their lives. Though united in their love for animals, each member has a unique inspiration for giving.

Mary Alves is dedicated to making a difference in the well-being of animals. "In my ideal world, no innocent animal would suffer. Charitable instincts would prevail. There would be global acceptance of all different types of

animals," she said. "I'm establishing funds to support feline genetics research and student scholarships, as both felines and education are near and dear to my heart."

"We are sincerely thankful to Ms. Alves for her commitment to animal health,"

Lairmore expressed. "She and other members of the Heritage Society for Animals make a significant impact in the future health of animals for many generations to come."

For more information about the Heritage Society for Animals or planning for an estate gift, please contact the Development Office at (530) 752-7024.



Dean Lairmore welcomes Mary Alves as a new member of the Heritage Society for Animals.



Career Night

Kat De Oliveira, class of 2015, and Chris Shacoski, owner and hospital director of the Solano-Napa Pet Emergency Clinic, were two of the many participants attending Career Night—a great opportunity to explore career possibilities with companies, practitioners and agency recruiters.

Mark your calendar for the next Career Night, March 7, 2014. For more information, email development@vetmed.ucdavis.edu.

Maxine Adler Endowed Chair in Genetics

Danika Bannasch, professor in the Department of Population Health and Reproduction, is the first faculty member to hold the prestigious Maxine Adler Endowed Chair in Genetics. This honor was made possible by a generous gift from the estate of Maxine Adler. The endowed chair is a fitting legacy to Adler's life-long passion for the health and well being of animals.

An accomplished veterinary geneticist, Bannasch focuses her research on identifying the molecular causes of inherited diseases in dogs and horses. Her laboratory has identified the DNA changes responsible for Alaskan Husky encephalopathy, cleft lip and palate, hyperuricosuria, juvenile Addison's disease, spinal dysraphism, hereditary equine regional dermal asthenia and lethal white foal syndrome.

Support from the endowment will allow the Bannasch Laboratory to develop diagnostic tests to aid animal breeders; identify novel genes and pathways as candidates for human disease; and understand basic molecular mechanisms of disease.



Danika Bannasch

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CE Calendar

Veterinary Continuing Education

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September 20-21, 2013

Veterinary Ophthalmology Symposium
Tenaya Lodge, Yosemite Valley

October 13, 2013

5th Annual UC Davis Veterinary
Practitioners Seminar, Davis

November 1-3, 2013

Donkey Welfare Symposium, UC Davis

November 3, 2013

UC Davis VMTH/SF SPCA
Year in Review Symposium, San Francisco

*For information on these and other 2013 events,
please visit www.vetmed.ucdavis.edu/ce.*



Kabang, a hero dog from the Philippines who came to UC Davis for facial surgery, has finally completed all her treatments. After VMTH veterinarians also discovered heartworm and a tumor upon her arrival, her anticipated six-week stay became nearly eight months. A team of VMTH veterinarians, technicians and support staff successfully brought Kabang back to health. She returned home to her family in the Philippines in early June with a new lease on life.

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